

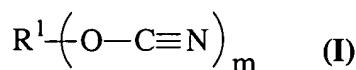
Application No.: 10/827,324
Amendment and Response dated July 10, 2006
Reply to Office Action of April 10, 2006
Docket No.: LC-487 US (500-188)
Page 2

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

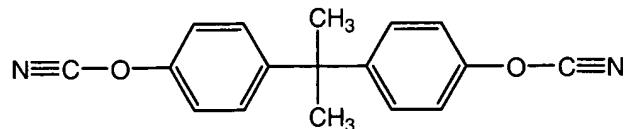
Listing of Claims:

1. (Withdrawn) An anaerobically curable composition comprising:
(a) a cyanate ester compound having the structure of formula I:



wherein m is from 2 to 5 and R¹ is an aromatic nucleus-containing residue; and

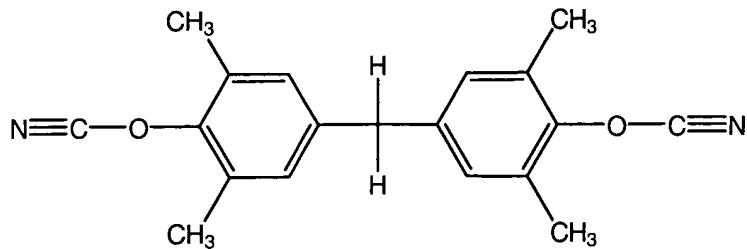
2. (Withdrawn) The curable composition of claim 1, wherein said cyanate ester compound is selected from the group consisting of 1,3-dicyanatobenzene; 1,4-dicyanatobenzene; 1,3,5-tricyanatobenzene; 1,3-, 1,4-, 1,6-, 1,8-, 2,6- or 2,7-dicyanatonaphthalene; 1,3,6-tricyanatonaphthalene; 4,4'-dicyanato-biphenyl; bis(4-cyanatophenyl)methane; 3,3',5,5'-tetramethyl, bis(4-cyanatophenyl)methane; 2,2-bis(3,5-dichloro-4-cyanatophenyl)propane; 2,2-bis(3,5-dibromo-4-dicyanatophenyl)propane; bis(4-cyanatophenyl)ether; bis(4-cyanatophenyl)sulfide; 2,2-bis(4-cyanatophenyl)propane; tris(4-cyanatophenyl)-phosphite; tris(4-cyanatophenyl)phosphate; bis(3-chloro-4-cyanatophenyl)methane; cyanated novolac; 1,3-bis[4-cyanatophenyl-1-(methylethylidene)]benzene, cyanated, bisphenol-terminated polycarbonate,



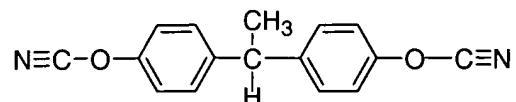
"AROCY" B-10

;

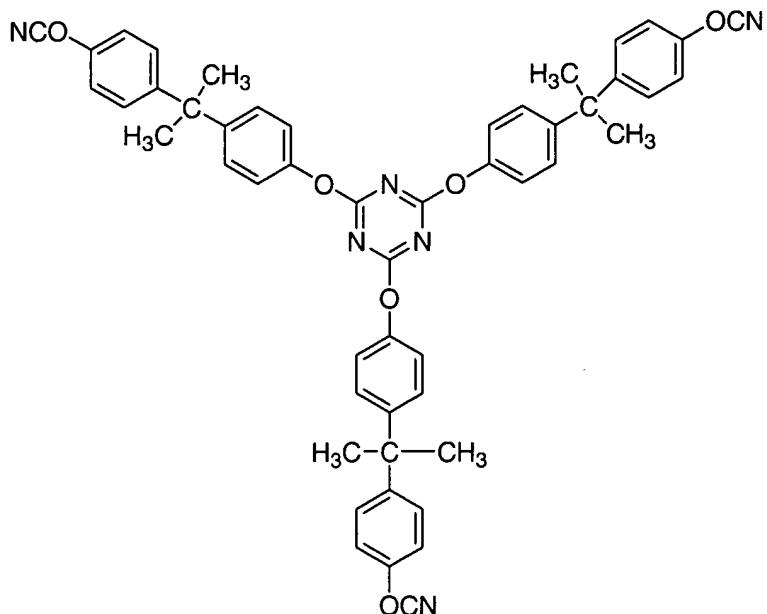
Application No.: 10/827,324
Amendment and Response dated July 10, 2006
Reply to Office Action of April 10, 2006
Docket No.: LC-487 US (500-188)
Page 3



"AROCY" M-30



"AROCY" L10; and



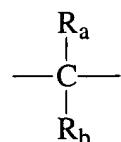
"AROCY" B-30.

and combinations thereof.

3. (Withdrawn) The curable composition of claim 1, wherein R¹ is derived from an aromatic hydrocarbon.

4. (Withdrawn) The curable composition of claim 1, wherein R¹ is selected from the group consisting of benzene, biphenyl, naphthalene, anthracene and pyrene.

5. (Withdrawn) The curable composition of claim 1, wherein R¹ is derived from a polynuclear aromatic hydrocarbon in which at least two aromatic rings are bonded to each other through a bridging member, wherein said bridging member has the formula:

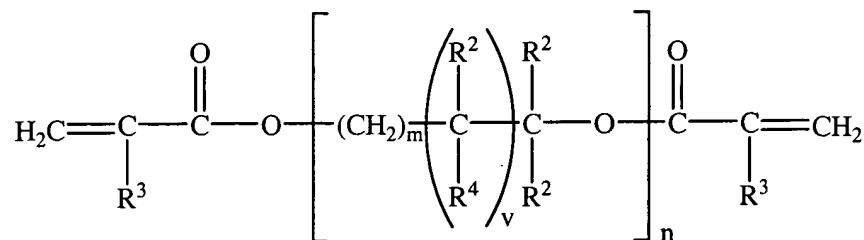


wherein R_a and R_b are the same or different and each represents a hydrogen atom or an alkyl group containing 1 to 4 carbon atoms.

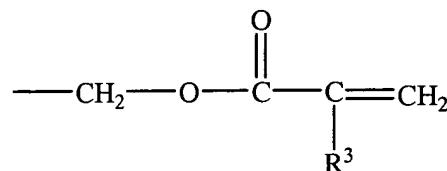
6. (Withdrawn) The curable composition of claim 1, wherein R¹ is derived from novolac-type phenolic resins.

7. (Withdrawn) The curable composition of claim 1, wherein said (meth) acrylate monomer is selected from the group consisting of polyethylene glycol di(meth)acrylates, tetrahydrofuran (meth)acrylates, di(meth)acrylates, hydroxypropyl (meth)acrylate, hexanediol di(meth)acrylate, trimethylol propane tri(meth)acrylate, diethylene glycol di(meth)acrylate, triethylene glycol di(meth)acrylate, tetraethylene glycol di(meth)acrylate, dipropylene glycol di(meth)acrylate, di(pentamethylene glycol) di(meth)acrylate, tetraethylene diglycol di(meth)acrylate, diglycerol tetra(meth)acrylate, tetramethylene di(meth)acrylate, ethylene dimethacrylate, neopentyl glycol diacrylate, trimethylol propane triacrylate, bisphenol-A di(meth)acrylates, ethoxylated bisphenol-A (meth)acrylate and combinations thereof.

8. (Withdrawn) The curable composition of claim 1, wherein said (meth)acrylate monomer has the formula:

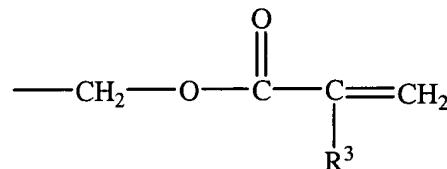


wherein R^2 may be selected from hydrogen, alkyl of 1 to about 4 carbon atoms, hydroxyalkyl of 1 to about 4 carbon atoms or



R^3 may be selected from hydrogen, halogen, and alkyl of 1 to about 4 carbon atoms;

R^4 may be selected from hydrogen, hydroxy and



m is an integer equal to at least 1;

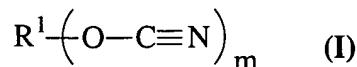
n is an integer equal to at least 1; and

v is 0 or 1.

9. (Withdrawn) The curable composition of claim 1, further comprising a free radical initiator.

10. (Currently amended) ~~The curable composition of claim 1, further comprising~~ An anaerobically curable composition comprising:

(a) a cyanate ester compound having the structure of formula I:

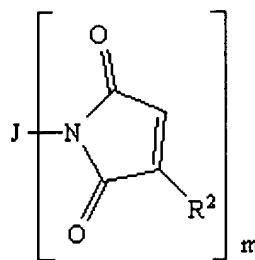


wherein m is from 2 to 5 and R¹ is an aromatic nucleus-containing residue;

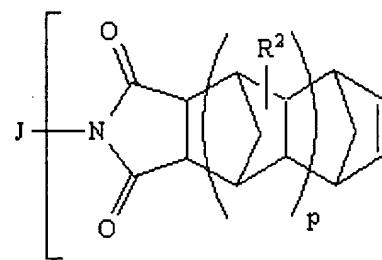
(b) a (meth)acrylate monomer;

(c) one or more maleimides, nadimides or itaconimides selected from the group consisting of the following structures:

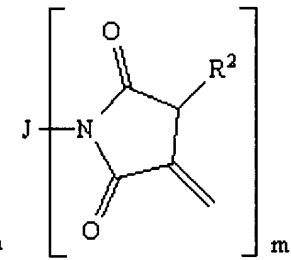
(V)



(VI)



(VII)



wherein m = 1-15, p = 0-15, R² is independently selected from hydrogen or lower alkyl, and J is a monovalent or a polyvalent moiety comprising organic or organosiloxane radicals, and combinations thereof; and

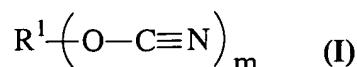
(d) an anaerobic cure-inducing composition,

wherein said curable composition is free of added metallic catalyst and wherein said curable composition cures at room temperature when placed between two surfaces at least one of which having an active metallic surface.

11. (Withdrawn) The curable composition of claim 1, further comprising an inorganic filler.

12. (Withdrawn) A curable composition comprising the reaction product of

(a) a cyanate ester compound having the formula:



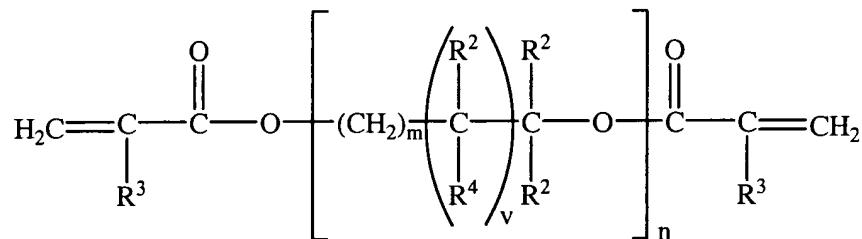
wherein m is from 2 to 5 and R¹ is an aromatic nucleus-containing residue;

(b) a (meth)acrylate monomer, wherein said composition is free of added metallic catalyst and

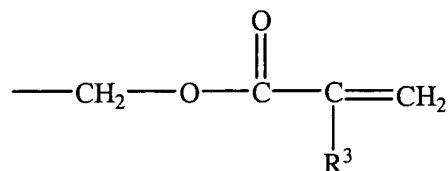
(c) an active metallic surface.

13. (Withdrawn) The curable composition of claim 12, wherein said active metallic surface is selected from the group consisting of zinc, copper, cadmium, iron, nickel, alloys thereof, steel and stainless steel.

14. (Withdrawn) The curable composition of claim 12, wherein said (meth)acrylate monomer has the formula:

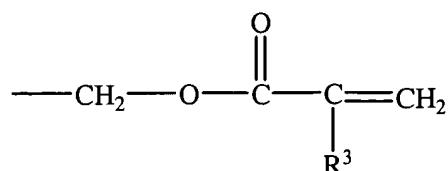


wherein R^2 may be selected from hydrogen, alkyl of 1 to about 4 carbon atoms, hydroxyalkyl of 1 to about 4 carbon atoms or



R^3 may be selected from hydrogen, halogen, and alkyl of 1 to about 4 carbon atoms;

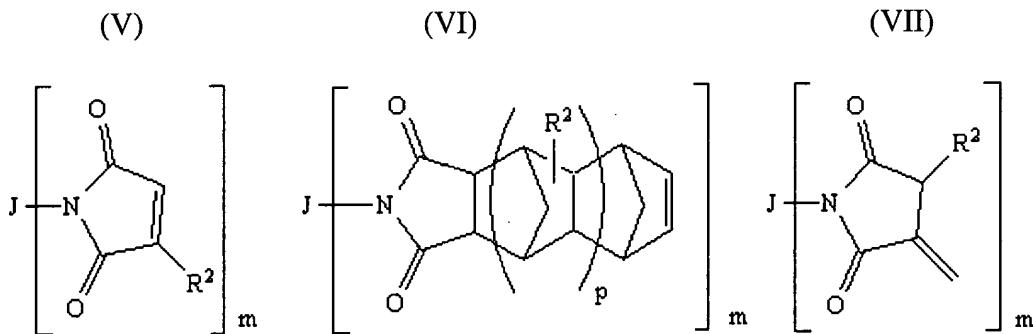
R^4 may be selected from hydrogen, hydroxy and



m is an integer equal to at least 1;
n is an integer equal to at least 1; and
v is 0 or 1.

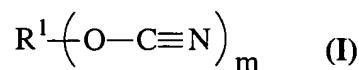
15. (Withdrawn) The curable composition of claim 12, further comprising a free radical initiator.

16. (Withdrawn) The composition of claim 12 further comprising one or more maleimides, nadimides or itaconimides selected from the following structures:



wherein m = 1-15, p = 0-15, each R² is independently selected from hydrogen or lower alkyl, and J is a monovalent or a polyvalent moiety comprising organic or organosiloxane radicals, and combinations thereof.

17. (Withdrawn) A method for bonding metallic surfaces comprising:
(a) providing activated metallic mating surfaces;
(b) applying to at least one of said mating surfaces a curable composition comprising a cyanate ester compound having the formula:



wherein m is from 2 to 5 and R¹ is an aromatic nucleus-containing residue and said composition is free of added metallic catalyst; and

(c) mating said surfaces and allowing said curable composition to cure therebetween.

18. (Withdrawn) An article of manufacture comprising:

substrates having active metallic surfaces and a curable composition therebetween to adhesively join the substrates to one and the other, wherein the curable composition comprises a cyanate ester compound and said composition is free of added metallic catalyst.

19. (Withdrawn) The article of manufacture according to claim 18, wherein said article is a threaded fastener.

20. (Withdrawn) The article of manufacture according to claim 18, wherein said article comprises a nut and a bolt.

21. (Withdrawn) A cured composition formed by the process of:

(a) providing a substrate having an active metallic surface and
(b) applying a curable composition therebetween wherein the curable composition comprises a cyanate ester compound wherein said composition is free of added metallic catalyst; and
(c) subjecting said composition to conditions suitable to effectuate cure.

22. (Withdrawn) A method for producing threadlocking matable parts said method comprising the steps of:

(a) applying a composition comprising a cyanate ester compound free of added metallic catalyst to at least a portion of an engagement surface of a matable part which is matably engageable with a complimentary engagement structure;
(b) mating said complimentary engagement structures;

- (c) subjecting said composition to conditions suitable to effectuate cure, thereby forming threadlocked matable parts.

23. (Currently amended) A method of providing a multi-staging curable composition to obtain increased thermal resistance comprising

- (a) combining curable components, said components comprising a first curable component comprising an anaerobically curable monomer, said monomer curing at ambient temperature;

- (b) a second curable component comprising a cyanate ester, ~~said second component free of added metallic catalyst, which cures at ambient temperature in the presence of an active metallic surface; and~~

- (c) a third curable component comprising a maleimide which cures at about 200°C or more and which imparts heat-aged strength retention at 600°C; and

- (d) an anaerobic cure-inducing composition,
wherein said curable composition is free of added metallic catalyst and wherein said curable composition cures at room temperature when placed between two surfaces at least one of which having an active metallic surface.

24. (Currently amended) A ~~multi-staging~~ curable composition for obtaining increased thermal resistance and heat-aged strength retention comprising:

- (a) an anaerobically curable monomer;

- (b) a cyanate ester ~~free of added metallic catalyst; and~~

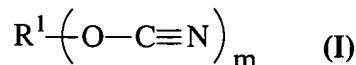
- (c) a maleimide; and

- (d) an anaerobic cure-inducing composition,

wherein said curable composition is free of added metallic catalyst and wherein said curable composition cures at room temperature when placed between two surfaces at least one of which having an active metallic surface.

25. (Currently amended) An anaerobically curable composition comprising:

(a) a cyanate ester compound having the structure of formula I:

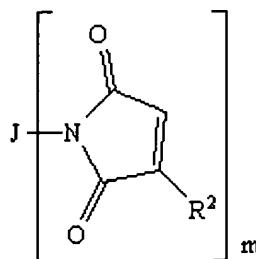


wherein m is from 2 to 5 and R^1 is an aromatic nucleus-containing residue;

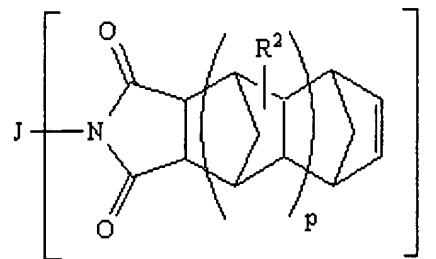
(b) a (meth)acrylate monomer; and

(c) one or more maleimides, nadimides or itaconimides selected from the group consisting of the following structures:

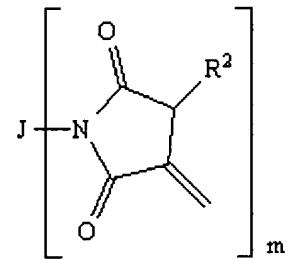
(V)



(VI)



(VII)



wherein m = 1-15, p = 0-15, each R^2 is independently selected from hydrogen or lower alkyl, and J is a monovalent or a polyvalent moiety comprising organic or organosiloxane radicals, and combinations of two or more thereof, and wherein said composition is free of added metallic catalyst; and

(d) an anaerobic cure-inducing composition,

wherein said curable composition cures at room temperature when placed between two surfaces at least one of which having an active metallic surface.